

## Industrial Matrix Drive

### U1000



Increase your green space with YASKAWA's Industrial Matrix Drive (U1000), the product that goes beyond conventional drives, providing outstanding harmonic performance and regeneration in a single stand-alone component.



Enjoy extremely low harmonic distortion and regeneration in a space-saving design, completely without the need for additional components. Unlike conventional drives, YASKAWA's matrix technology creates a variable output by switching directly from the input power (no DC bus). Additionally, the Matrix drive is a member of the YASKAWA industrial drive family, and provides the same user experience.

• 400V POWER RANGE  
2.2kW - 400kW (HD)

• 200V POWER RANGE  
3.7kW - 55kW (HD)

AMBIENT OPERATING TEMP  
• -10°C to 50°C (OPEN TYPE IP00)  
to 60°C (with derating)

CERTIFICATION  
• UL, CSA, CE, RoHS

STANDARD I/O  
• (8) Digital Inputs  
• (3) Analog Inputs  
• (1) Pulse Train Input  
• (2) Safe Torque Off Inputs  
• (1) Fault Relay Output  
• (1) Multi Functional Digital Output  
• (2) Photo-Coupler Output  
• (2) Analog Output  
• (1) Safe Torque Off Output

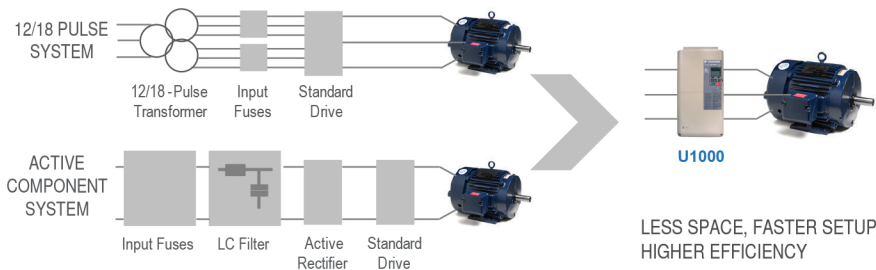
STANDARD COMMUNICATIONS  
• Modbus RTU

CONTROL OPTIONS  
• EtherNet/IP  
• Modbus TCP/IP  
• DeviceNet  
• Profibus DP  
• CCLink  
• CANOpen  
• Profinet  
• Expandable I/O  
• Incremental Encoder  
• Absolute Encoder  
• Resolver

MECHANICAL OPTIONS  
• External Heatsink  
• Stall prevention  
• IP20/NEMA 1  
• Removable terminal board with parameter back-up function

USING COMPLICATED SYSTEMS FOR  
LOW HARMONICS OR POWER REGENERATION?

TRY THE EFFICIENT WAY WITH THE  
U1000 INDUSTRIAL MATRIX DRIVE



#### Primary Features & Benefits

- Full Regeneration
- Low Input Distortion Across a Wide Load and Speed Range
- IEEE-519 Compliant (<5% THD) at rated load
- Eco-Mode to Achieve Near Across-the-Line THD
- High Efficiency Design Provides Extra Energy Savings as Compared to Other Low Harmonic Solutions
- Near Unity True Power Factor at Full Load
- Integrated Input Fusing Provides 100kA SCCR
- Compact Design
- High Reliability with an MTBF of 28 Years
- Built-In Modbus RTU communications
- Removable Terminal Block
- Safe Torque Off rated for SIL CL3 and PLe
- High Carrier Frequency (Low Motor Noise) Capability
- Multi-language LCD Display with Copy function
- Drive Wizard Plus Software
- Start into Spinning Load (Speed Search)
- Both Induction and Permanent Magnet Motor Control

# Standard Specifications

## Energy-Saving Unit

### 200 V Class

Model CIMR-UA □□□□□□		2□0028	2□0042	2□0054	2□0068	2□0081	2□0104	2□0130	2□0154	2□0192	2□0248	
Rated Input/Output	Rated Input Current A	ND	25	38	49	62	74	95	118	140	175	226
		HD	20	25	38	49	62	74	95	118	140	175
	Rated Input Capacity kVA	ND	12	17	22	28	34	43	54	64	80	103
		HD	9	12	17	22	28	34	43	54	64	80
	Rated Output Current A	ND	28	42	54	68	81	104	130	154	192	248
HD		22	28	42	54	68	81	104	130	154	192	
Overload Tolerance		HD Rating: 150% of rated output current for 60 s, ND Rating: 120% of rated output current for 60 s (Derating may be required for repetitive loads)										
Carrier Frequency		4 kHz (User adjustable up to 10 kHz. Derating may be required.)										
Max. Output Voltage		Depends on input voltage										
Max. Output Frequency		400 Hz										
Power	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%									
Harmonic Current Distortion Rate		5% or less (IEEE 519) at rated load and speed										
Input Power Factor		0.98 or more (for rated load)										

### 400 V Class

Model CIMR-UA □□□□□□		4□0011	4□0014	4□0021	4□0027	4□0034	4□0040	4□0052	4□0065	4□0077	4□0096	4□0124	4□0156	
Rated Input/Output	Rated Input Current A	ND	10	13	19	25	31	36	47	59	70	87	113	142
		HD	8.7	10	13	19	25	31	36	47	59	70	87	113
	Rated Input Capacity kVA	ND	9	12	17	22	28	33	43	54	64	80	103	130
		HD	8	9	12	17	22	28	33	43	54	64	80	103
	Rated Output Current A	ND	11	14	21	27	34	40	52	65	77	96	124	156
HD		9.6	11	14	21	27	34	40	52	65	77	96	124	

Model CIMR-UA □□□□□□		4□0180	4□0216	4□0240	4□0302	4□0361	4□0414	4□0477	4□0590	4□0720	4□0900	4□0930	
Rated Input/Output	Rated Input Current A	ND	164	197	218	275	329	377	434	537	655	819	846
		HD	142	164	197	218	275	329	377	434	537	655	819
	Rated Input Capacity kVA	ND	150	180	200	251	300	344	396	490	598	748	773
		HD	130	150	180	200	251	300	344	396	490	598	748
	Rated Output Current A	ND	180	216	240	302	361	414	477	590	720	900	930
HD		156	180	216	240	302	361	414	477	590	720	900	
Overload Tolerance		HD Rating: 150% of rated output current for 60 s, ND Rating: 120% of rated output current for 60 s (Derating may be required for repetitive loads)											
Carrier Frequency		CIMR-UA4 □ 0011 to 4 □ 0414: 4 kHz (User adjustable up to 10 kHz. Derating may be required.) CIMR-UA4 □ 0477 to 4 □ 0930: 3 kHz											
Max. Output Voltage		Depends on input voltage											
Max. Output Frequency		400 Hz											
Power	Rated Voltage/Rated Frequency		Three-phase AC power supply: 380 to 480 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%										
Harmonic Current Distortion Rate		5% or less (IEEE 519) at rated load and speed											
Input Power Factor		0.98 or more (for rated load)											