

# YASKAWA

HVAC **MATRIX** Drive  
Z1000U

## HVAC Matrix Drive Z1000U 7.5 to 350 HP

Merging **Green & Technology:**  
The Z1000U Matrix Drive for  
Building Automation

**Increase your green space with the Yaskawa HVAC Matrix Drive (Z1000U), the product that goes beyond conventional drives by combining excellent harmonic mitigation, input power factor control and energy saving capabilities.**

The HVAC Matrix drive (Z1000U) provides extremely low harmonic distortion in a space-saving design, along with the same HVAC-specific features as the standard Z1000. This single component solution achieves excellent low distortion levels all by itself, completely without the need for additional countermeasures such as passive filters or multi-pulse arrangements. Unlike conventional drives, Yaskawa's matrix technology creates a variable output by switching directly from the input power (no DC bus). Not only does the Matrix drive provide outstanding harmonic performance, but being a member of the Z1000 family, it provides the same user experience for those already familiar with commissioning and maintaining the standard Z1000.

### Primary Features and Benefits:

- Low Input Distortion Across a Wide Load and Speed Range
- IEEE-519 Compliant (<5% THD)
- 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
- 0.98 Displacement Power Factor Throughout Entire Load and Speed Range
- Integrated Input Fusing Provides 100kA SCCR
- Integrated C2 EMC Filter
- Compact Design
- High Reliability with an MTBF of 28 Years
- Embedded BACnet Communications (BTL Certified)
- Embedded Real Time Clock for Event Stamping
- High Carrier Frequency (Low Motor Noise) Capability
- 0-400 Hz Output Frequency
- 120% Overload for 60 Seconds
- Motor Auto-tuning
- Multi-language LCD Display, with Hand/Off/Auto and Copy function
- DriveWizard® HVAC Software
- Embedded Timer Functions for Starting, Stopping and Speed Changes
- Start into Spinning Load (Speed Search)
- Both Induction and Permanent Magnet Motor Control



### AVAILABLE I/O

- (8) Multi-function digital inputs
- (3) Multi-function analog inputs
- (3) Multi-function relay outputs
- (2) Multi-function 0-10 VDC or 4-20 mA analog outputs
- (1) Fault relay

### NETWORK COMMUNICATION

- Embedded BACnet communications, Metasys N2, Siemens Apogee FLN and Modbus/Memobus
- Optional: LonWorks and EtherNet/IP

### POWER RANGE VT RATINGS

- 208 - 240 V : 10 - 100 HP
- 380 - 480 V : 7.5 - 350 HP

### CERTIFICATION

- UL, CSA, CE, RoHS

### AMBIENT OPERATING TEMPERATURE (OPEN TYPE IPOO)

- -10°C to 50°C (14°F to 122°F)

### AVAILABLE PACKAGES

- Bypass
- Configured
- NEMA 1 Kit





## HVAC Matrix Drive Z1000U

7.5 to 350 HP

### Z1000U Dimensions & Specifications

Open Chassis  
(IP00)

208-240 V Class			Dimensions (inches)				Weight (lb)
Model: CIMR-ZU2E□	Amps	HP 240V (208V)	Fig. No.	H	W	D	
0028	28	10 (7.5)	1	18.89	9.84	14.17	46
0042	42	15 (10)		25.60	10.39	16.53	73
0054	54	20 (15)		25.60	10.39	16.53	79
0068	68	25 (20)		25.60	10.39	16.53	79
0081	81	30 (25)	2	32.12	10.39	17.71	139
0104	104	40 (30)		32.12	10.39	17.71	139
0130	130	50 (40)	3	38.97	16.33	15.86	254
0154	154	60 (50)		38.97	16.33	15.86	254
0192	192	75 (60)		44.56	19.29	17.71	399
0248	248	100 (75)		44.56	19.29	17.71	399

480 V Class			Dimensions (inches)				Weight (lb)
Model: CIMR-ZU4E□	Amps	HP	Fig. No.	H	W	D	
0011	11	7.5	1	18.89	9.84	14.17	46
0014	14	10		18.89	9.84	14.17	46
0021	21	15		18.89	9.84	14.17	46
0027	27	20		18.89	9.84	14.17	46
0034	34	25		18.89	9.84	14.17	46
0040	40	30		25.60	10.39	16.53	73
0052	52	40		25.60	10.39	16.53	73
0065	65	50		25.60	10.39	16.53	79
0077	77	60	2	32.12	10.39	17.71	139
0096	96	75		32.12	10.39	17.71	139
0124	124	100	3	38.97	16.33	15.86	254
0156	156	125		38.97	16.33	15.86	254
0180	180	150		44.56	19.29	17.71	399
0216	216	175		44.56	19.29	17.71	399
0240	240	200		44.56	19.29	17.71	399
0302	302	250		44.56	27.36	17.71	589
0361	361	300		44.56	27.36	17.71	589
0414	414	350		44.56	27.36	17.71	589

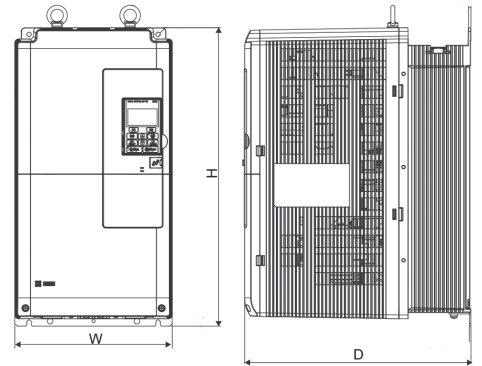


Figure 1

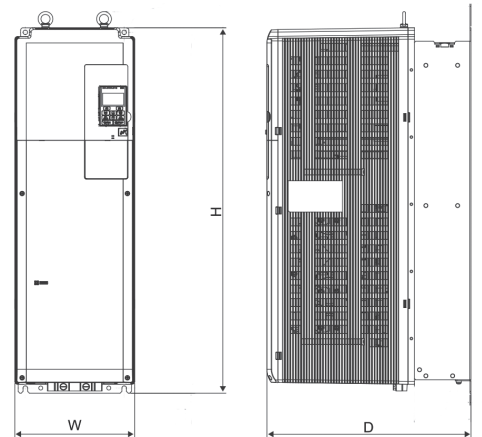


Figure 2

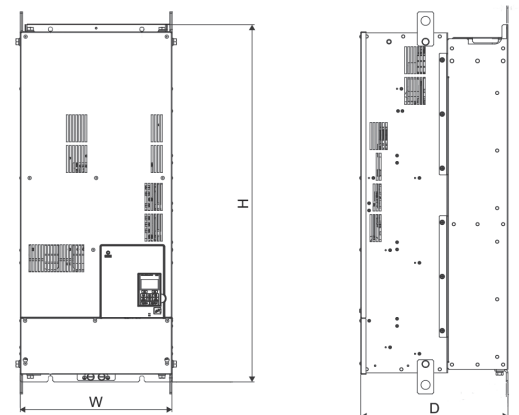
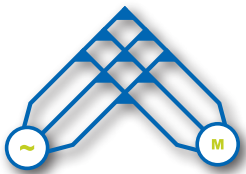


Figure 3



### Z1000U Matrix Innovation

Improved Energy Efficiency with Direct Conversion from AC to AC